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10/716,248	11/17/2003	David M. Tucker	VCSre	5207

7590 12/21/2005  
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EXAMINER

GARBER, CHARLES D

ART UNIT PAPER NUMBER

2856

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 12/07/2005 have been fully considered but they are not persuasive.

Applicant argues with respect to claims 1, 2, 4-9, that the Graves reference relied upon in the prior Office Action of 09/07/2005 has the same deficiencies as the Graves reference relied upon in the Office Action of 04/13/2005.

Examiner considers a careful reading of both references will show the Graves reference relied upon in the 09/07/2005 Office Action discloses substantially more including an additional teaching of the pig receiver also on the sea floor and an additional teaching of dosing the flood water with dye in preparation for "hydrotesting".

"Hydrotesting" is defined in the NACE International and Battelle reference provided herein as a hydrostatic test. Wikipedia defines Hydrostatic testing as a test performed on pipelines where water or oil dosed with dye is pumped into the pipeline at pressure to find leaks. The earlier Graves reference did not disclose pumping in water dosed with dye in preparation for hydrostatic pressure testing. The additional teaching of provided by the new Graves reference of a pig receiver on the sea floor eliminated the need to rely on the Matthews reference teachings. The additional teaching of dosing the flood water with dye in preparation for hydrostatic testing also provided greater motivation to modify Graves to continue on with pumping to a higher sustained pressure to complete a hydrostatic test taught by Bliss. Examiner believes the new Graves reference allows for a simpler and stronger combination.

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Applicant also argues that Graves does not teach pumping and maintaining pressure to assure no leaks as in hydrostatic testing. Examiner admittedly acknowledged this deficiency but then relied upon Bliss for this teaching. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant also argues Bliss does not teach the launcher is submerged and that a submersible vehicle is used to operate the pump. Applicant also attributes disclosure of this deficiency to Examiner.

Examiner did not note this deficiency of Bliss in the previous Office Action. Nonetheless, Examiner had already relied on the primary Graves reference for this teaching. Again, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

Applicant argues that claim 3 is allowable for the same reasons as claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Les Graves "Deepwater pipeline flooding and pigging without connection to a surface vessel", Transactions – Institute Of Marine Engineers, Series C, 1999; Vol 111, Nr 1, pages 151-160 (henceforth referred to as "Graves") in view of Bliss et al. (US Patent 5,883,303).

Regarding claims 1, 4, 7-9, Graves discloses "pigging and flooding" (page 151) a pipeline that is "ready to test immediately" by "hydrotesting" (page 160). Graves also discloses launching the pig or pig train from a Subsea Pigging Unit (SPU) (page 151) to a "pig receiver". Graves describes "removal and recovery of the pig receiver" (page 157) in order to carry out "pig inspection". The Graves reference refers to the terms "recovery", "recover" and "recovered" only in the context of retrieving devices and equipment from the sea floor which clearly indicates to one of ordinary skill in the art that the pig receiver, which is located at the other end of the already laid pipeline, was also on the sea floor like the pig launcher.

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Graves further discloses using an "ROV" to operate a "Boost Pump" forcing sea water into the pipeline to move the pig train to the receiver (see figure 4 and pages 151, 156-157, and 160).

The action of pigging will inherently effect cleaning a pipeline by scrapping along the inner surface of the pipeline as in the instant invention and the introduction of "dye" (page 154) is for visual leak testing and "intelligent pigs" are for "Straightness" testing (page 160). In this context the SPU may be considered to be both a fill as well as test package as in the instant invention.

However, Graves does not expressly teach pumping and maintaining pressure to assure no leaks as in hydrostatic testing of the instant invention.

Bliss discloses an "apparatus and method for pigging, flooding and pressure testing pipelines". Bliss also discloses his invention is principally directed to an improved pig receiver. Conventionally intervention is required by a diver or ROV to operate the Receiver to receive the pig then manually manipulate valves to allow test pressure from the upstream side to be applied. Bliss's interest is mainly in an undersea pig receiver that allows the pig to enter "the pig receiver to allow pigging, flooding, and pressure testing of the pipeline without human intervention at the downstream end." (see column 1 lines 35-63). But more importantly, Bliss teaches it is conventional to combine pressure testing with pigging and flooding because "[a]ll hazardous [material] ...pipelines are required by government regulation to be pressure tested after construction and prior to being placed into service."

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to increase the pressure in the pipeline after the pig is received to a "required test pressure" where it may be "monitored by the test crew on the production facility". This will determine if there are any leaks in the conventional manner after a subsea pipeline is newly installed on the sea floor.

As for claim 2, Graves also discloses a "control and instrument panel on the unit allows ROV (or Divers) to check flow and pressure measurements as appropriate" (see figure 5 and page 156).

As for claim 5, while the Graves reference discloses the ROV making a "hot-stab" connection of the "skid based subsea pump" the reference does not expressly disclose the ROV doing so with robotic arm.

Examiner takes Official Notice that it is widely known in the art of subsea petroleum operations to use ROV's with robotic arms to make connections, turn valves and so on. Robotic arms are intended to take the place of Divers in general under sea operations. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an ROV with a robotic arm to take the place of a diver thereby reducing risk to personnel and saving time required for divers to decompress.

As for claim 6, the Graves reference figures 1 and 2 show at least the pig launcher side not yet connected to other piping or equipment. Because the pipeline remains filled with air or gas (against "the external pressure of the sea [that] exerts a high differential pressure", page 154) pending the pigging and flooding operation

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Examiner considers the pipeline is not yet connected to the other piping (except that which may be also pigged and flooded in this operation).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Les Graves "Deepwater pipeline flooding and pigging without connection to a surface vessel", Transactions – Institute Of Marine Engineers, Series C, 1999; Vol 111, Nr 1, pages 151-160 (henceforth referred to as "Graves") as modified by Bliss et al. (US Patent 5,883,303) and applied to claim 1 above and further in view of Corbetta (US Patent 6,234,717).

Graves discloses the SPU may be lowered and raised by a crane from a surface support vehicle and positioned with assistance by an ROV (page 158). Graves, does not expressly disclose the device may be carried by the ROV.

Corbetta teaches an ROV carrying various equipment including a seal ring test system for pressure testing newly assembled section of a conduit (column 13 line 66 to column 14 line 11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to carry a pressurizing system on an ROV. Carrying subsea equipment with an ROV alleviates the inherent risk of equipment carried by divers or by surface vessels, which use lines that are subject to tangling. Surface vessels are also subject to heaving and may complicate the lowering and placement of the skid as discussed in the Graves reference.

### ***Conclusion***



**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Charles D. Garber  
Primary Examiner  
Art Unit 2856

cdg